

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/010143 A2**

- (51) International Patent Classification<sup>7</sup>: C12N
- (21) International Application Number:  
PCT/US2004/011988
- (22) International Filing Date: 15 April 2004 (15.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/486,694 11 July 2003 (11.07.2003) US  
60/533,103 29 December 2003 (29.12.2003) US
- (71) Applicant (for all designated States except US): OREGON HEALTH AND SCIENCE UNIVERSITY [US/US]; 2525 SW First Avenue, Suite 120, Mail Stop AD120, Portland, OR 97201 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): NELSON, Jay [US/US]; c/o Oregon Health & Science University, 3181 SW Sam Jackson Park Road, Mailcode VGTI, Portland, OR 97239 (US). HIRSCH, Alec [US/US]; c/o Oregon

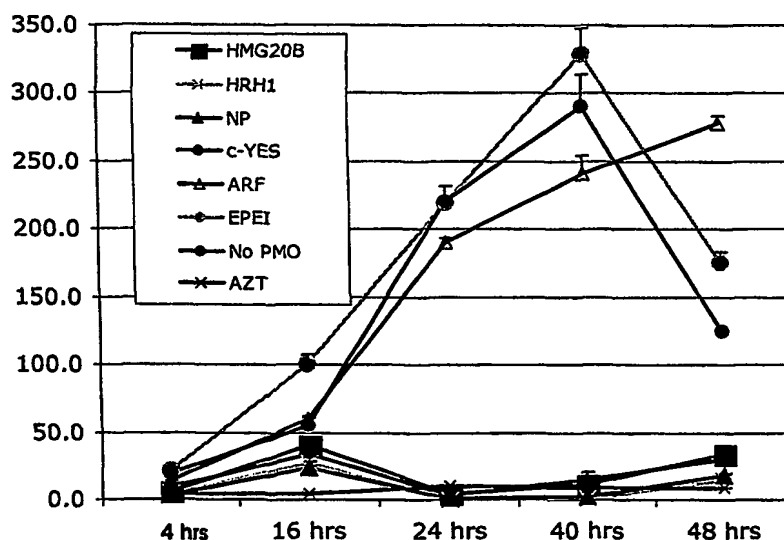
Health & Science University, 3181 SW Sam Jackson Park Road, Mailcode VGTI, Portland, OR 97239 (US). FRUH, Klaus [DE/US]; c/o Oregon Health & Science University, 3181 SW Sam Jackson Park Road, Mailcode VGTI, Portland, OR 97239 (US). DEFILIPPIS, Victor [US/US]; c/o Oregon Health & Science University, 4865 SW Larch Drive, Beaverton, OR 97005 (US). KING, Jeff [US/US]; c/o Oregon Health & Science University, 3181 SW Sam Jackson Park Road, Mailcode VGTI, Portland, OR 97239 (US). MOSES, Ashlee [ZA/US]; c/o Oregon Health & Science University, 3181 SW Sam Jackson Park Road, Mailcode VGTI, Portland, OR 97239 (US). JELINEK, Laura [US/US]; c/o Oregon Health & Science University, 3181 SW Sam Jackson Park Road, Mailcode VGTI, Portland, OR 97239 (US).

(74) Agents: DAVISON, Barry, L. et al.; Davis Wright Tremaine LLP, 2600 Century Square, 1501 Fourth Avenue, Seattle, WA 98101-1688 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

[Continued on next page]

(54) Title: METHODS OF TREATMENT AND DISGNOSIS USING MODULATORS OF VIRUS-INDUCED CELLULAR GENE SEQUENCES



(57) Abstract: Applicants have used microarrays, gene expression profiling, and gene silencing methods to identify and provide a plurality of 'validated' virus-induced cellular gene sequences (e.g., HMG20B, HRH1, NP and c-YES (src family kinases)) and pathways useful as therapeutic targets for modulation of viral-mediated cellular effects. Particular embodiments provide therapeutic compositions, and methods for modulation of viral infection, replication, maturation, progression, or other virally-related conditions or diseases, comprising inhibition of virally-induced gene sequences and gene products. Additional embodiments provide screening assays for compounds useful to modulate viral infection, replication, maturation or progression, or viral-related conditions or diseases.

Further embodiments provide diagnostic and/or prognostic assays for viral infection, replication, maturation or progression. Preferably, the viruses all selected from the group consisting of retroviruses (e.g., human immunodeficiency virus (HIV), and viruses of the family Flaviviridae that includes the flaviviruses (e.g., West Nile virus (WNV), Japanese encephalitis virus (JEV), yellow fever virus (YFV) and Dengue fever virus (DEN)), and hepatitis C virus (HCV).



MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,

**Published:**

- *without international search report and to be republished upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*